

### ABSTRACT

A superconducting rotating machine includes a stator assembly. This stator assembly includes at least one stator coil assembly having a first predefined length. A rotor assembly is configured to rotate within this stator assembly and is spaced from the stator assembly by a gap. The rotor assembly includes at least one superconducting rotor winding assembly that, in operation, generates a magnetic flux linking the stator assembly. The rotor assembly includes an asynchronous field filtering shield having a second predefined length that is less than the first predefined length. This shield is positioned between the stator assembly and the rotor assembly.

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